

CLAIMS

Sub E1

1. Method of suppressing amylose formation in potato, characterised by genetically engineered modification of the potato by introducing into the genome of the potato tissue a gene construct comprising a fragment of the potato gene which codes for formation of granule-bound starch synthase (GBSS gene) inserted in the antisense direction, said fragment being selected among the fragments which essentially have the nucleotide sequences stated in SEQ ID No. 1, SEQ ID No. 2 and SEQ ID No. 3 together with a promoter selected among CaMV 35S, patatin I and the GBSS promoter.

15 2. Amylopectin-type native starch, characterised in that it has been obtained from potato which has been modified in a genetically engineered manner for suppressing formation of amylose-type starch.

20 3. Derivatised amylopectin-type starch, characterised in that it is amylopectin-type starch extracted from potato which has been modified in a genetically engineered manner for suppressing formation of amylose-type starch, said amylopectin-type starch subsequently being derivatised in a chemical, physical or enzymatic manner.

25 4. Fragment of the gene coding for granule-bound starch synthase (GBSS) in potato, said fragment being selected among the fragments which essentially have the nucleotide sequences stated in SEQ ID No. 1, SEQ ID No. 2 and SEQ ID No. 3.

30 5. Promoter for the gene for granule-bound starch synthase (GBSS) in potato, said promoter being tuber-specific and having essentially the nucleotide sequence stated in SEQ ID No. 4.

35 6. Gene coding for granule-bound starch synthase in potato (GBSS gene) having essentially the nucleotide sequence stated in SEQ ID No. 5.

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7. Antisense construct for inhibiting expression of the gene for granule-bound starch synthase in potato, comprising

a) a promoter,

5 b) a fragment of the gene coding for granule-bound starch synthase inserted in the antisense direction, said fragment being selected among the fragments having essentially the nucleotide sequences stated in SEQ ID No. 1, SEQ ID No. 2 and SEQ ID No. 3.

Sub
D³

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8. Antisense construct as claimed in claim 7,
characterised in that the promoter essentially has the sequence stated in SEQ ID No. 4.

9. Antisense construct as claimed in claim 7,
characterised in that the promoter is select-
ed among the CaMV 35S promoter and the patatin I promoter.

~~uk E4~~ 10. Vector comprising a fragment of the gene coding for granule-bound starch synthase (GBSS) in potato, said fragment being selected among the fragments having essentially the nucleotide sequences stated in SEQ ID No. 1, SEQ ID No. 2 and SEQ ID No. 3, and inserted in the anti-sense direction.

11. Vector comprising the antisense construct as claimed in any one of claims 7-10.

12. Cell of potato plant whose genome comprises the
25 antisense construct as claimed in ~~any one of~~ claims 7 & 9.

13. Potato plant whose genome comprises the antisense construct as claimed in ~~any one of~~ claims 7 and 8.

14. Potato tubers whose genome comprises the antisense construct as claimed in ~~any one of~~ claims 7, 19.

30 15. Seeds from potato plant, whose genome comprises
the antisense construct as claimed in ~~any one of claims~~
7A&B.

16. Microtubers of potato, whose genome comprises the antisense construct as claimed in ~~any one of~~ claims 7-9.

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Add 1/7 D⁴-D⁵⁻ + H⁺ + I⁻